

WE CLAIM:

1. A peritoneal dialysis solution including bicarbonate at a level of less than or equal to 30 mM/L, 5 having a carbon dioxide partial pressure that is less than 60 mmHg and including at least one weak acid at a level of between approximately 15 mEq/L and approximately 20 mEq/L selected from the group consisting of: lactate; 10 pyruvate; citrate; isocitrate; cis-aconitase; α -ketoglutarate; succinate; fumarate; malate; and oxaloacetate.

2. The peritoneal dialysis solution of Claim 1 wherein bicarbonate is present in the solution at 25 mM/L.

15 3. The peritoneal dialysis solution of Claim 1 wherein the carbon dioxide partial pressure of the solution is approximately the same as the carbon dioxide partial pressure of blood.

20 4. The peritoneal dialysis solution of Claim 1 wherein the solution has a pH of approximately 7.0 to about 7.4.

5. The peritoneal dialysis solution of Claim 1 wherein the weak acids have a pKa of < 5.0.

6. A peritoneal dialysis solution comprising:

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|---------------------------|---------|
| Dextrose (hydrous) (g/dL) | 1.5-4 |
| Sodium (mEq/L) | 100-140 |
| Chloride (mEq/L) | 70-110 |
| Calcium (mEq/L) | 0.0-4 |
| Magnesium (mEq/L) | 0.0-4 |
| Bicarbonate (mEq/L) | 20.0-3 |
| Weak acid (mEq/L) | 10.0-2 |

wherein the weak acid is at least one acid chosen from the group consisting of: lactate; pyruvate; citrate; isocitrate; cis-aconitase; α -ketoglutarate; succinate; fumarate; malate; and oxaloacetate, the solution having a

carbon dioxide partial pressure that is less than 60 mmHg.

7. The peritoneal dialysis solution of Claim 6 wherein the solution has a pH of approximately 7.0 to 5 about 7.4.

8. The peritoneal dialysis solution of Claim 6 wherein the weak acids have a pKa of < 5.0.

9. The peritoneal dialysis solution of Claim 6 wherein the carbon dioxide partial pressure of the 10 solution is approximately the same as the carbon dioxide partial pressure of normal blood.

10. A peritoneal dialysis solution comprising:

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|---------------------------|----------|
| Dextrose (hydrous) (g/dl) | 1.5-4.2 |
| Sodium (mEq/L) | 100-140 |
| Chloride (mEq/L) | 70-110 |
| Calcium (mEq/L) | 0.0-4.0 |
| Magnesium (mEq/L) | 0.0-4.0 |
| Bicarbonate (mEq/L) | 20.0-30. |
| Weak acid (mEq/L) | 10.0-20. |

15 wherein the weak acid is at least one acid chosen from the group consisting of: lactate; pyruvate; citrate; isocitrate; cis-aconitase; α -ketoglutarate; succinate; fumarate; malate; and oxaloacetate; and

20 the solution has a carbon dioxide partial pressure that is substantially similar to the carbon dioxide partial pressure of a normal subject's blood and the solution has a pH of approximately 7.0 to about 7.4.

11. A method for correcting metabolic acidosis in a dialysis patient suffering or likely to suffer from same comprising the step of:

administering to a patient a peritoneal dialysis solution that has a bicarbonate level and carbon dioxide partial pressure that are substantially similar to that

found in the patient's blood wherein the solution comprises:

| | |
|---------------------------|---------|
| Dextrose (hydrous) (g/dl) | 1.5-4 |
| Sodium (mEq/L) | 100-140 |
| Chloride (mEq/L) | 70-110 |
| Calcium (mEq/L) | 0.0-4 |
| Magnesium (mEq/L) | 0.0-4 |
| Bicarbonate (mEq/L) | 20.0-3 |
| Weak acid (mEq/L) | 10.0-2 |

5 12. The method of Claim 11 including the step of administering to the patient a weak acid that is present in the solution in an amount that offsets the daily hydrogen production of approximately 1 mEq/kg/day.

10 13. The method of Claim 12 wherein the weak acids have a pKa of < 5.0.

14. The method of Claim 10 wherein the solution has a pH of approximately 7.0 to about 7.4.

15 15. The method of Claim 11 wherein the solution does not include lactate.

16. The method of Claim 12 wherein the weak acid is present in the solution at a level of approximately 10 to about 20 mEq/L.